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EXAMINER

GORDON, BRIAN R

ART UNIT PAPER NUMBER

1743

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/803,414

Applicant(s)

NEAL ET AL.

Examiner

Brian R. Gordon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 24-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9/12/03. 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of group IV, claims 24-27, in Paper filed November 18, 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 24-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification discloses a three-stage needle device, each stage having a separate inlet and a separate flow path. Each flow path also further comprises separate valves. As understood by the examiner gas is extracted through the top stage and liquid is extracted

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through the lower stages. The extraction of each substance is facilitated by a sequence of steps including the changing of positions of numerous valves and the activation of different pumps. Claim 24 implies that the device facilitates the extraction gas and liquid through a single flow path by means of opening and closing one valve. What is the one particular valve (A-F, 64, or 108) that causes this change of extraction? If there is only one flow path how can liquid flow in the flow path when the valve is in a closed position?

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 27 and 39-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilks US 5,432,098.

Wilks discloses an apparatus, and process, for extracting organic fluids and solids specimens from weighed amounts of semi-solids and solids samples for collection, concentration and transfer to an analytic unit. The organic specimen is picked up by a probe assembly from a single compartment septum-sealed vial by heating and slurrying the sample, contacting with a gas; and then transferring the organic specimen with the gas to a collection device, e.g., a syringe or adsorbent trap. The specimen is then transported to an analytical instrument for analysis.

The invention relates to the automatic extraction of soluble organic components, gases, liquids or solids specimens, or gases, liquids and solids specimens, from solids and semi-solids samples for analysis via automated techniques.

In a preferred embodiment solids or semi-solids specimens contained in bottles, or vials, are delivered by a feed tray, magazine or **carrousel** in seriatim, to a solids preparation and extraction station (means for extracting and preparing sample) wherein the solids or semi-solids are crushed and ground, contacted directly with a solvent, heated and mixed to dissolve out the organic liquid or solids components from the solid or semi-solids material, the liquid or solids components contacted and vaporized, or otherwise dispersed, in a non-reactive gas, and the non-reactive gas containing the extracted liquid or solids component is then passed to a collection device, suitably a syringe (means for presenting samples) or purge gas trap analyzer, for transfer and subsequent analysis, e.g., in a gas chromatograph or mass spectrometer.

Liquid and solids components, particularly volatile organic contaminants as may be contained in, e.g., a **soil** sample, are released from the solids or semi-solids materials as the extraction becomes virtually complete.

Wilks also discloses the invention of a patent incorporated by reference which discloses an automated apparatus for extracting fluid and solids specimens from solids and semi-solids samples for analysis is disclosed in Averette's U.S. Pat. No. 5,147,551 which issued on Sep. 15, 1992 to Dynatech Precision Sampling Corporation. This instrument departed from earlier models,

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such as disclosed in Averette's U.S. Pat. No. 5,012,845 which issued on May 07, 1991 to Dynatech Precision Sampling Corporation, which were designed to pick up from vials and process only fluid specimens for analysis. The later instrument, or instrument disclosed in the '551 patent, was adapted to extract for analysis fluid or solid specimens from weighed amounts of solids or semi-solids samples contained within one of the compartments of a compartmented vial. The compartmented vials were carried via a feed tray, or magazine (vial storage area), to a station adjacent to a solids preparation and extraction sub-assembly for processing and pick up of the specimen. Water, or other solvent, was added to the solids or semi-solids material in the upper compartment of the vial, the solids or semi-solids material was crushed and ground, heated, gas was fed into a lower compartment and passed through a frit into the upper compartment **to extract the specimen for transport to an automated syringe**, or purge trap for containment and subsequent injection into the analytical instrument. However, whereas this instrument has performed admirably, and has extended the field of usage of these instruments, in handling some samples excessive foaming occurs which sometimes interferes with the transfer of the extracted specimen from the compartmented vials. Additionally, inter alia, some simplification may be helpful, and it is desirable to eliminate the need of using compartmented vials for the extraction and analysis.

6. Claims 24-28, 39-42, and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Lewis et al. US 6,544,799.

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Lewis et al. disclose a modular vial autosampler has **a storage area** for vials containing samples to be analyzed and at least one modular sampling station. **A vial transfer mechanism** includes an arm having a gripper that lifts a sample vial from the storage section, and the arm moves it to a station for identification and then to a sampling station, and under central control activates **the sampling station for obtaining a sample for analysis**. The vial transfer mechanism gripper is movable in X, Y, and Z directions to capture and move a selected vial and includes an alignment guide for the vials. Potentiometers are used for providing signals indicating arm position and the control is provided with updated information for calibration of the potentiometers and also updated position information for the arm relative to a fixed home position is obtained.

Vial storage area 14 includes a fixed or stationary platform shaped to receive removable vial racks 30a, 30b, which vial racks are preferably substantially identical. Specimen-containing vials can be loaded into pockets or receptacles 31 of racks 30a, 30b at a separate location and kept in storage until needed. Preferably, the skirts of racks 30a, 30b slide down over **thermal blocks 48a, 48b (one for each rack)** which are fixedly mounted to vial storage platform area 14.

A vial can be transported by vial transporter 28 from the equilibration area 16 or directly from the vial storage area 14 to one of the sampling stations 20 or 22 where sampling operations are performed. At each of the sampling stations, a fluid is extracted from the vial. At sampling station 20, a liquid sample from a liquid specimen is extracted from the vial for subsequent sparging to remove

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volatiles from the liquid sample. At sampling station 22, a sample in the form of a gas or vapor is extracted from the vial during a sparging operation, preferably after injecting a liquid into the vial to contact a liquid or solid (e.g. **soil**) specimen, stirring the resulting mixture, and heating the mixture.

Vial transporter 28 loads and unloads a vial into vial holder 82 at the lowest position. As the elevator raises the vial, a needle assembly 92 punctures the vial septum. Sampling of the vial contents occurs at the highest position, where the needle assembly 92 fully penetrates the vial. Needle assembly 92, well known in the art, has an inner needle with a port at its lower tip and an outer needle having a port higher up at point 94. At the highest position of the vial, the port at 94 remains above the level of the liquid specimen in the vial while the tip of the inner needle is submerged in the liquid specimen. The inner needle communicates with fitting 96, and the outer needle communicates with fitting 98. In operation, a volume of the liquid specimen is drawn through the center needle and conveyed via fitting 96 to a sparger unit 100 (see FIGS. 1 and 10) on base unit 12 or to an external sparger unit.

A series of sequentially controlled valves, coupled with a syringe type pump provides for the analysis of samples removed from the vials placed in the sampling station.

It is important to note that the system permits backflushing the needles with a water or liquid to remove previous sample traces, utilizing the cup type vial holders to collect the backwash liquid and drain it as previously discussed and



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shown. A multi port chromatograph valve is utilized to permit selectively adding a known volume of two different **standards** into the test sample.

***Conclusion***


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rao et al., Deukeleer et al., Tatsumi, Mester et al., Schmidt et al., Fuerst et al., and Lewis et al., (,225) disclose sampling and analysis devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

brg

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700